REMARKS

Claims 1-15, 21-34 have been amended in response to the rejections set forth in the Office Action of January 31, 2001. Such amendments are supported by the Specification, for example at page 20, lines 1-5 and at page 44, lines 12-13. Thus, no new matter has been added.

In passing, it is noted that the current office action appears to have given the application a rather cursory examination. For example, Claims 16-20, which were cancelled in response to a prior office action, appear to have been rejected again. Additionally, the contents of the present office actions appear to have been cut and pasted verbatim from prior office actions, without any consideration being given to the remarks distinguishing the prior art, which were made in response thereto.

DRAWINGS

The objections to the drawings are noted. Formal drawings will be submitted when the application is allowed.

SECTION 112 REJECTIONS

Claims 1, 7, 12, 16, and 27 were rejected under Section 112, second paragraph, as being indefinite. This rejection is now moot in view of the above amendments. It is noted in passing that Claim 16 was cancelled in response to the Office Action of September 26, 2000.

To better understand a system which includes the present invention, it may be helpful to consider the following example.

At a first time, called T1, a network is created which illustratively comprises three devices, at least one of which is a network controller. The three devices are called "current components" of the network because each is currently part of the network.

At a second time, called T2, a network communication channel is created which contains an arbitrary number of designated time slots, one of which is a quiet time slot. The quiet time slot is provided to allow one or more new devices to be added to the network as it operates.

At a third time, called T3, it is desired to add a new device to the network. In the specification and claims, the new device is recited as being initially not admitted to the network. For example, the new device may not be initially admitted to the network because it is turned off, is out of communication range, is offline, etc. However, such devices are capable of being made part of the network.

Continuing the example, at a fourth time, called T4, the new device powers up and listens to the network's internal communication channel to find a quiet time slot in which to transmit a connection request message to the network controller device previously mentioned.

At a fifth time, called T5, the connection request message is received by the network controller device, which confirms the message and retransmits it back to the new device until a response from the new device is received.

Following confirmation of the connection request message, negotiations occur between the network controller and the new device. Illustratively, these negotiations may include determining the bandwidth and non-quiet time slots assigned to the new device.

Upon completion of negotiations, the new device is admitted to the network and is made a current component thereof.

As illustrated above, it is possible for a new device, which is not yet admitted to a network, to listen to an internal communication channel to find a quiet time slot therein in which to transmit a connection request message. Consequently, the claims clearly and distinctly point out the subject matter of the claimed invention as required by Section 112, second paragraph. Thus, allowance of the above-mentioned claims and their dependent claims is respectfully requested at the earliest possible time.

THE SECTION 103(a) REJECTIONS – BORGSTAHL AND ALTVATER

Claims 1, 7, 12, 16, and 27 were rejected under Section 103(a) as being obvious over BORGSTAHL (U.S. 5,909,183) in view of ALTVATER (U.S. 5,889,771). This rejection is now moot in view of the amendments made to Claims 1-15 and 21-34. For this reason, and the reasons set forth below, the claims are patentable over the cited references.

BORGSTAHL teaches a system and method for programming an appliance using a controller. In this system and method, peer nodes listen to a channel and periodically initiate unsolicited connection attempts with other peer nodes, whenever another peer node comes within a "particular proximity to each other." Thus, physical proximity is a key aspect of the Borgstahl invention. If a connection attempt is successful, e.g. a second peer has come within a particular proximity of the first peer, the peers negotiate back and forth to determine whether a connection between the peers will be established or not, according to the needs and capabilities of the peer nodes. It is to be noted in passing, that

a system which includes the present invention does not establish communications between network devices based merely on proximity as taught by Borgstahl.

A prima facie case of obviousness is established when there is some suggestion or motivation to modify the reference or to combine reference teachings, there exists a reasonable expectation of success; and the prior art reference, or references, when combined teach or suggest all the claim limitations. MPEP 2142. The burden of establishing the prima facie case rests with the Examiner. *See*, *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998).

Here, a prima facie case was not established because one or more of the above elements was lacking. For example, neither the prior art references themselves nor the knowledge generally available to one skilled in the art suggest making the suggested combination. The office action did not set forth any objective reason to combine the teachings of the references. Instead, the office action merely stated, "In that Borgstahl operates to generate service requests via an appliance control, the artisan would have looked to the multiplexing arts for details of implementing a connection request." (page 4, lines 4-5). While the first half of this statement may be correct, the second half merely claims that modifications of the prior art would have been well within the ordinary skill of the art at the time the invention was made. Neither reference suggests the desirability of the suggested combination. Consequently, a prima facie case of obviousness was not established, and the claims are patentable over the cited references.

Assuming arguendo, that a prima facie case of obviousness was established, the present invention is still patentable over the cited references because the cited references

teach away from the present invention. Regarding Claim 1, for example, Borgstahl does not teach or suggest designating time slots within a communication channel. Additionally, Borgstahl does not teach or suggest transmitting a connection request message in a designated time slot, as claimed, a fact tacitly admitted by the Office Action on page 4, lines 4-5. The Office Action makes no attempt to get around this fact except to say, in the next sentence that because "...Borgstahl operates to generate service requests via an appliance control, the artisan would have looked to the multiplexing arts for details of implementing a connection request." Id. This argument assumes that the connection request recited in the claims is the same as the service requests taught by Borgstahl, but the assumption underlying the argument, is flawed. As taught by Figure 10 in Borgstahl, a service request includes communications relayed "between a connected peer and a remote device" as well as "user input data," items which are not part of the "communication requests" recited in the claims.

Assuming arguendo, however, that the service requests of Borgstahl were the same as the connection requests recited in the claims, the present invention is still patentable over Borgstahl, because Borgstahl does not teach transmitting the service requests in designated quiet time slots. Because Borgstahl fails to teach each and every element of Claim 1, this claim and its dependent claims are patentable over Borgstahl.

Similarly, Claim 7 is patentable over Borgstahl, because the claim recites elements that Borgstahl does not teach or suggest. For example, claim 7 recites determining the presence of designated time slots within a communication channel and transmitting a connection request in a discovered quiet time slot. These elements are not taught or suggested by Borgstahl.

In like manner, Claim 12 is also patentable over Borgstahl. With regard to Claim 12, the Office Action correctly noted that Borgstahl discloses a negotiation process. However, the Office Action failed to understand that the negotiation process taught by Borgstahl teaches away from the negotiation process recited in Claim 12. The negotiation process taught by Borgstahl involves two peer nodes swapping information relating to the needs and capabilities of each peer back and forth. *See*, Col. 8, lines 58-67. In contrast, a system which includes the present invention negotiates bandwidth requirements for new devices that are added to the network. These bandwidth requirements include the designation of the number of forward and backward time slots allocated to each new device that is added to the network, something not taught or suggested by the prior art. Accordingly, Claim 12 is patentable over Borgstahl, because Borgstahl does not teach or suggest the negotiation of bandwidth requirements as recited in the claims.

Claim 27 is also patentable over Borgstahl. As to Claim 27, Borgstahl does not teach or suggest designating a quiet time slot for use by a first device initially not admitted to the network, but capable of being admitted to the network.

Adding the teachings of ALTVATER does not cure the deficiencies of Borgstahl. Consequently, Claims 1, 7, 12, and 27 are patentable over ALTVATER in combination with Borgstahl.

Altvater teaches a scheme wherein a node of a computer network transmits data in unoccupied frequency channels in a frequency-hopping network. In a frequency-hopping network, a plurality of channels is defined by specifying a series of particular radio

frequencies. Thus, the frequency assigned to a first communication channel may be 90.7 MHz; the frequency assigned to a second communication channel may be 100.1 MHz; the frequency assigned to a third communication channel may be 87.6 MHz, and so on. Assigning a communication channel a particular radio frequency is entirely different than designating one or more time slots within the communication channel as recited by the claims. For example, as recited in the claims, the communications packets transmitted at 90.7 MHz over the first communication channel may be constructed of an arbitrary number of time slots (e.g. periods of time within a designated channel), one of which is a quiet time slot. Neither Borgstahl nor Altvater teach or suggest designating time slots within a communication channel, one of which is a quiet time slot. Additionally, Altvater does not teach or suggest negotiating bandwidth requirements.

Instead, Altvater teaches scanning all available frequencies within a frequency-hopping network to find an open (or empty) frequency. If such a frequency is found, a portion of the data to be transmitted from one device to another is transmitted over the empty frequency before the transmission hops the next available empty frequency. In contrast, a system which includes the present invention operates entirely differently. Whereas a system which includes the present invention specifically designates particular time slots within a communication channel, Altvater fills random "empty" frequencies in an active frequency-hopping network that might otherwise go unused. Because a system which includes the present invention only fills quiet time slots that have been designated within a particular communication channel, operation of a system which includes the present invention may leave open one or more other particular frequencies (e.g. communications channels), contrary to the teachings of Altvater. Thus, it is possible to

fill one or more quiet time slots in a first communication channel operating, for example, at 90.7 MHz, while leaving other frequencies empty.

As mentioned above, the combination of Altvater with Borgstahl fails to cure the deficiencies of Borgstahl. Specifically, with respect to Claim 1, Borgstahl failed to teach or to suggest the transmission of a connection request message within a time slot that has been designated within a communication channel. Likewise, Altvater contains no such teaching or suggestion. With respect to Claim 7, Borgstahl failed to teach or suggest the designation of one or more quiet time slots within a communication channel. Similarly, Altvater contains no such teaching or suggestion. With respect to Claim 12, Borgstahl failed to teach or to suggest negotiation of bandwidth requirements. In like manner, Altvater contains no such teaching or suggestion. With respect to Claim 27, Altvater does not teach or suggest designating a quiet time slot within a communication channel. Instead, Altvater teaches scanning for and filling empty frequencies that randomly appear during normal operation of a frequency-hopping network.

For the above reasons, a prima facie case of obviousness has not been established. Altvater in combination with Borgstahl fails to disclose each and every element of the claimed invention. Accordingly, Claims 1, 7, 12, and 27, and their dependent claims, are patentable over the cited references, and allowance of the same is respectfully requested.

THE SECTION 103(a) REJECTIONS -- MOSEBROOK AND BARRETT

Claims 1-34 were rejected under Section 103 (a) as being obvious over MOSEBROOK (U.S. 5,905,442) in view of BARRETT (U.S. 5,699,532).

In passing, it is noted that Claims 16-20 were cancelled in response to a previous office action. Claims 1-15 and 21-34 were amended. The above rejection is moot in view of these amendments, which are supported by the Specification, as previously indicated above.

MOSEBROOK teaches a scheme in which various electrical devices such as those used for controlling electric lights are communicatively coupled to a central controller through an RF communication link. Mosebrook does not teach or suggest adding a new component to an existing network in the manner recited by the claims. Rather than using a designated quiet time slot as recited by the claims, Mosebrook teaches using a manual "install mode" at the network controller. Because Mosebrook uses a manual scheme, no quiet time slot is necessary. Thus, it is difficult to see how Mosebrook could contain any suggestion or motivation to modify the reference teachings to arrive at the claimed invention, which recites the designation of a quiet time slot within a communication channel. As shown in Figure 20 and described at Col. 25, lines 16 –30, Mosebrook teaches the designation of four random "back off slots for transmission." One of these slots is selected randomly by the master device for transmission of data, and a command packet transmitted in the selected slot is repeated in the following time slot. Id. The purpose of designating four "back off slots for transmission" and randomly

selecting one of them is to reduce the probability of two devices attempting to communicate at the same time. Id.

Contrary to Mosebrook, a system which includes the present invention does not randomly designate four time slots for transmission, and does not randomly select one of these four slots for transmission. Instead, the system of the present invention reduces the probability of two devices attempting to communicate at the same time in a different way, by designating a quiet time slot within a communication channel and particularly selecting the quiet time slot for transmission of a connection request. Accordingly, claims 1 and 7, which recite the designation of a quiet time slot, are patentable over Mosebrook.

Claim 12, which recites negotiating bandwidth requirements, is patentable over Mosebrook. The prior art reference discloses a system for remotely controlling electrical devices, for example electric lamps, without having to rewire an building's electrical system. Mosebrook does not teach or suggest negotiating bandwidth requirements possibly because the data transmissions between controllers may be limited to a small fixed bandwidth. In contrast to the controllers disclosed by Mosebrook, the devices associated with the present invention may require bandwidth of varying size. Thus, the bandwidth negotiation recited in Claim 12 is not taught or suggested by Mosebrook. Consequently, Claim 12 is patentable over the cited reference.

With regard to Claim 27, Mosebrook does not teach or suggest designating a quiet time slot within a communication channel. Additionally, Mosebrook does not teach or suggest transmitting a connection request from a first device, which is initially not

currently part of the network, in the quiet time slot. Because Mosebrook does not teach or suggest every element of Claim 27, the claim is patentable over the prior art.

Adding the teachings of BARRETT does not cure the deficiencies of Mosebrook. Barrett teaches a multi-path channel interface for computer input-output systems, and teaches a negotiation process for determining "certain communication parameters at the time a transmission group is activated." Col. 9, lines 64-65 to Col. 10, lines 1-3. Barrett, however, fails to teach or suggest the designation of a quiet time slot within a communication channel as recited in the claims. The bandwidth negotiations of the present invention, as recited by the claims, designate for each client one or more time slots (e.g. forward and backward bandwidth) to which the client is entitled, as well as the maximum number of bytes the new client can send/expect in each data packet for each type of packet (e.g. video data, audio data, etc.). See, Specification, page 19, lines 10-13. In contrast, the negotiations disclosed by Barrett merely verify the availability of a number of "sub-channels of the requested multi-path channel group," and resolve differences in the way data is handled. *See*, Col. 10, lines 44-55; Col. 7, lines 39-42.

In spite of this, rejected Claims 1, 7, 12, and 27 are patentable over Barrett in combination with Mosebrook, because neither Barrett nor Mosebrook teach or suggest the designation of a quiet time slot within a communication channel, an element common to each of the above claims. For example, although the negotiation of bandwidth requirements recited in Claim 12 may be obvious in view of Barrett, the transmission of a connection request in a quiet time slot by a first device initially not admitted to the network, also recited in Claim 12, is not taught or suggested by Barrett (nor by Mosebrook). Thus, Claim 12 and its dependent claims, together with Claims 1, 7, 27 and

their dependent claims, are patentable over the cited references, either alone or in combination.

Accordingly, allowance of Claims 1-15, 21-34 is respectfully requested.

Authorization is given to charge our Deposit Account No: 02-2666 for any deficiencies of fees.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 4/30, 2001

Tarek N. Fahmi
Registration No. 41,402

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1026
(408) 720-8300

MARKED COPY OF CLAIMS AS AMENDED

1. (Thrice Amended) A method of seeking admission to a computer network having two or more current components, the method comprising:

listening[,] at a first device [which is not a current component of the computer network,] to a communication channel having one or more quiet time slots designated therein, the communication channel communicatively coupling the two or more current components of the computer network, the first device not initially admitted to the computer network, but capable of joining the computer network upon acceptance of a connection request transmitted from the first device to at least one of the network's current components; and

transmitting[, from the first network device,] the connection request from the first device to a controller of the computer network within one of the designated quiet time slots [of the communication channel].

2. (Twice Amended) The method of Claim 1, further comprising:

[the] confirming the connection request by transmitting the connection request from the controller to the first [network] device periodically until a response from the first [network] device is received by the controller.

3. (Twice Amended) The method of Claim 2 further comprising:

sending[,] from the controller to the first [network] device, a connection agreements package, the package including information regarding time slots within the

communication channel to be used by the controller [for] when transmitting information to the first network device.

4. The method of Claim 3 wherein the connection agreement packet further includes information regarding non-quiet time slots within the communication channel to be used by the first device when transmitting information to the controller.

5. The method of Claim 4 wherein information sent between the first device and the controller comprises packets and the connection agreement packet further includes information the first network device can send or expect to receive in each packet for each type of data included in a packet.

6. The method of Claim 4 further comprising:

transmitting data from the first device to the controller in the non-quiet time slots designated in the connection agreement packet.

7. (Twice Amended) A method of seeking admission to a computer network having two or more current components, the method comprising:

determining[,] at a first device not initially admitted to the computer network, but capable of joining the computer network [which is not a current component of the computer network], whether a communication channel [used for] communicatively coupling the two or more current components of the computer network is actively being utilized by the current components of the computer network;

determining at the first device the existence of one or more quiet time slots designated within the communications channel; and

transmitting a message from the first device, within one or more of the quiet time slots designated within the communication channel, [a message] at a time depending upon whether the communication channel is actively being utilized or not.

8. The method of Claim 7 wherein if the communication channel is not actively being utilized, the first device listens to the communication channel for a response to the message before changing to a new communication channel.

9. The method of Claim 8 further comprising:

listening for channel activity in the new communication channel.

10. The method of Claim 9 further comprising negotiating for access to the new communication channel if channel activity is detected, otherwise transmitting a connection request message in the new communication channel and awaiting a response thereto.

11. The method of claim 10 further comprising:

repeatedly changing channels and, in each channel, listening for channel activity and either negotiating for channel access or transmitting the connection request message, depending upon whether channel activity is detected, for all available channels until an active channel is found or all available channels have been searched.

12. (Amended) A method of seeking admission to a computer network having two or more current components, at least one component being a network controller, the method comprising:

listening[,] at the network controller[,] for a connection request message transmitted in a quiet time slot by a first device not initially admitted to the computer network, but capable of joining the computer network [component, which is not a current component of a computer network in which the network controller operates], the connection request message seeking access for the first device to a communication channel communicatively coupling the network's two or more current components [seeking access to a communication channel communicatively coupling one or more current network components to the network controller]; and

[upon receipt of the connection request message,] negotiating bandwidth requirements within the communication channel with the first device [component] upon receipt of the connection request message.

13. (Amended) The method of claim 12 wherein negotiating comprises exchanging further connection request messages between the network controller and the first device [component] to synchronize the first [component] device to the network controller.

14. (Amended) The method of claim 12 further comprising:

authenticating the first device [component] by comparing a client identifier provided by the first device [component] against a list of known clients prior to negotiating bandwidth requirements.

15. (Amended) The method of claim 12 wherein negotiating bandwidth requirements comprises reallocating bandwidth within the communication channel among the one or more network components and the first device [component].

16 (Cancelled)

17 (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Amended) The method of claim 3 wherein the connection agreement packet comprises a connection agreement command field that identifies the packet, a forward bandwidth field to specify the number of packets that the first [network] device can expect to receive from the controller, a reverse bandwidth field to specify the number of packets that the first [network] device may send to the controller, a field that specifies a preceding on-line network device and a network on-line number.

22. (Amended) The method of claim 1 wherein the connection request identifies a subclient of the first [network] device.

23. (Amended) The method of claim 22 wherein the connection request is first transmitted from the subclient to the first [network] device across a wireless communication link before being transmitted from the first [network] device to the controller.

24. The method of claim 23 wherein the controller authenticates the subclient prior to allowing the subclient to access the computer network.

25. The method of claim 24 wherein the controller further determines whether sufficient bandwidth is available in the communication channel to accommodate the subclient prior to allowing the subclient to access the computer network.

26. (Amended) The method of claim 25 wherein the controller communicates the result of its decision whether or not to allow the subclient to access the computer network to the subclient via the first [network] device.

27. (Amended) A method of providing access to a computer network, comprising:

organizing communications within a computer network communication channel into a number of time slots, each time slot being designated for transmissions from one of a number of network components; and

including a quiet time slot within the communication channel for use by [new network components not previously associated with the computer network] a first device

seeking access to the communication channel, the first device not initially admitted to the network, but capable of joining the computer network.

28. (Amended) The method of claim 27 further comprising:

transmitting from the first [network component] device a request for access to the communication channel during the quiet time slot.

29. (Amended) The method of claim 28 wherein the request for access is repeated a number of times during the period of the quiet time slot.

30. (Amended) The method of claim 29 further comprising transmitting a response to the request for access from the first [new network component] device if no other requests for access were received from other [new network components] non-admitted devices at the same time as the request for access transmitted by the first [new network component] device, otherwise not transmitting a response.

31. (Amended) The method of claim 30 wherein if the first [new network component] device does not receive a response to the request for access, the first [new network component] device refrains from transmitting a further request for access to the communication channel for an arbitrary period of time.

32. (Amended) The method of claim 31 further comprising transmitting the further request for access from the first new network component and granting access to the communication channel to the first new network component in response thereto.

33. (Amended) The method of claim 28 further comprising recognizing at a second [new network component] non-admitted device the request for access transmitted by the first [new network component] device.

34. (Amended) The method of claim 33 wherein the second [new network component] non-admitted device refrains from transmitting a new request for access to the communication channel in response to recognizing the request for access transmitted by the first [new network component] device.